

**FIRST RECORD OF THE SHORE-FLY GENUS *PLACOPSIDELLA*
KERTÉSZ FROM NORTH AMERICA (DIPTERA: EPHYDRIDAE)**

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Abstract.—The shore-fly genus *Placopsidella* Kertész is reported from North America for the first time. The species, *P. grandis* (Cresson), was previously known from littoral habitats within the Pacific and Indian Ocean basins, with probable introductions into the eastern Mediterranean (Israel). This introduction apparently follows a similar pattern for other recent ephydrid introductions into North America, and these are apparently abetted by the large volume of commerce on the lower Chesapeake Bay and the natural history of the flies.

Key Words: Diptera, Ephydridae, *Placopsidella grandis* (Cresson), introduction

Peninsular Virginia and the Eastern Shore of Maryland and Virginia, especially their seashores and tidal rivers, appear to be focal points for the introduction of new taxa into North America. During the last two years alone, we have reported the introduction of two other shore and beach flies (Mathis and Steiner 1986, Mathis 1988) to these areas, and the purpose of this paper is to report yet another. The introduced shore fly, *Placopsidella grandis* (Cresson), is the first occurrence of that genus and species in North America, although previously it was reported from Panama, the first record from the Western Hemisphere (Mathis 1986).

I have adopted a taxonomic format to present the published history of the introduced species, chiefly to save space, and have attempted to provide all references to the species. Inasmuch as *Placopsidella* was recently revised (Mathis 1986), I have not repeated the characterizations of the genus and species. A brief diagnosis for the genus and species, however, plus figures of distinguishing characters are provided to facilitate identification. Consult Mathis (1986) for

further information on the genus and its included species.

***Placopsidella grandis* (Cresson)**

Figs. 1-5

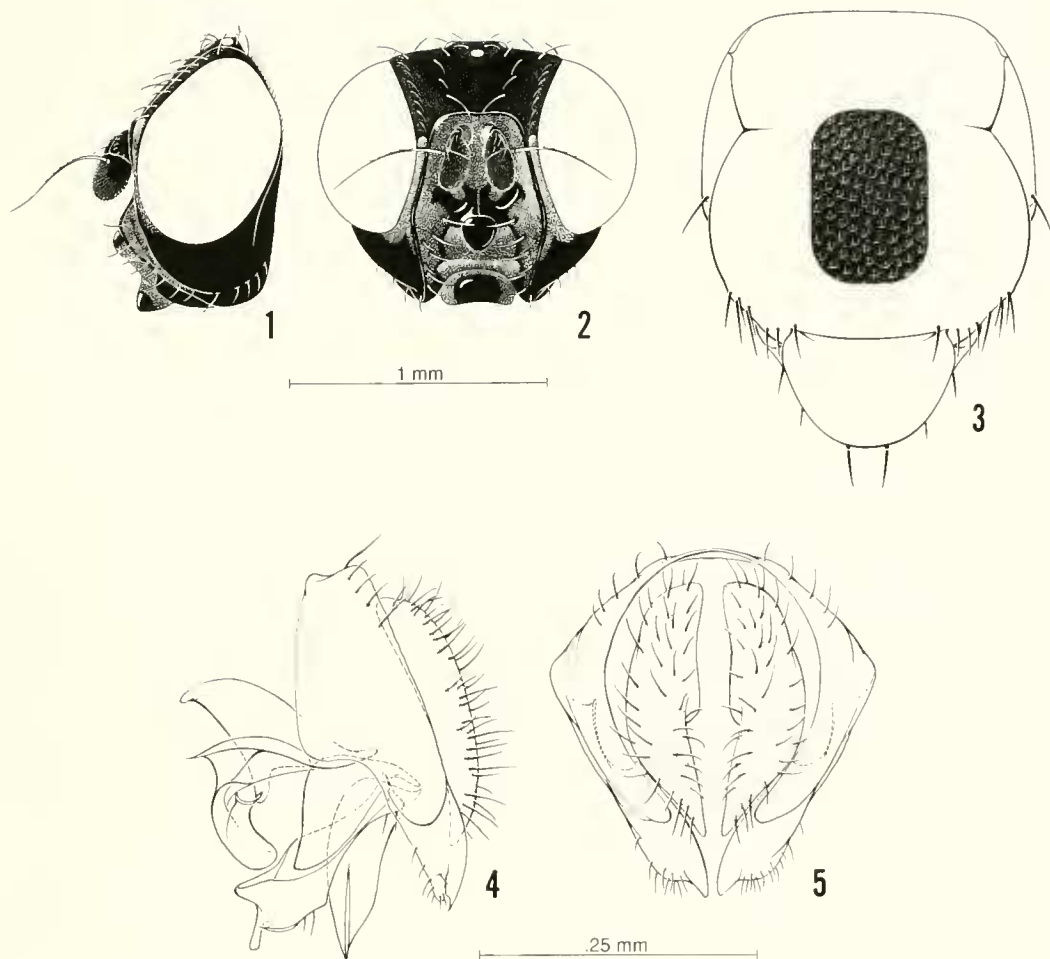
Gymnopa grandis Cresson 1925: 232; 1945: 54 [review].

Placopsidella grandis.—Cogan and Wirth 1977: 323 [comb.; Oriental cat.].—Mathis 1986: 22-25 [revision].

Placopsidella opaca Miyagi 1977: 30-31.—Cogan 1984: 129 [Palearctic cat.].—Mathis 1986: 23 [syn. with *P. grandis*].

Mosillus grandis.—Tenorio 1980: 268 [comb.; review of Hawaiian species].

Diagnosis.—*Placopsidella* belongs to the tribe Gymnolini and is closely related in the North American fauna only to *Mosillus* Latreille. Like the latter, the ocellar and pseudopostocellar setae are either much reduced or absent, there is a single notopleural seta that is inserted in the posterior angle of the notopleuron, and the arista is bare or nearly so. *Placopsidella* is distinguished from *Mosillus* and other genera of Gymnolini by



Figs. 1-5. *Placopsidella grandis*. 1, Head, lateral view. 2, Head, anterior view. 3, Thorax, dorsal view. 4, Male genitalia, lateral view. 5, Male genitalia, posterior view.

its grayish brown to brown microtomentose vestiture, the absence of an outer vertical seta (the inner seta is present, although only moderately well developed), and the presence of four to six large setae between the postalar seta and the base of the scutellum. Other genera of Gymnolini are mostly shining black, nearly bare of microtomentum, and there are no large setae between the postalar seta and the base of the scutellum. In Wirth et al.'s key (1987) to the genera of North American Ephydriidae, *Placopsidella* keys to the first half of couplet 39 (*Mosillus*) but is distinguished by the char-

acters just outlined. *Placopsidella* is strictly coastal in distribution, mostly intertidal, whereas *Mosillus* occurs inland.

Within *Placopsidella*, this species belongs to the *liparoides* species group and is distinguished from congeners by its smaller size (length 2.7 to 3.7 mm), silvery white facial microtomentum, pattern of shining areas on face, conically prominent face, the anteriormost aspect of the facial prominence shining, darker antenna, number of scutellar bristles (two), and the unique conformation of the male genitalia (see figs.).

Canzoneri (1986) recently described *P.*

rossii from a specimen collected in West Africa (Sierra Leone). That species is apparently very similar to *P. grandis* and is reported to differ from the latter only by characters of the male genitalia. I have not examined the holotype male of this species, but would not be surprised to learn that it is conspecific with *P. grandis*.

Materials examined.—VIRGINIA. Northampton Co., Kiptopeke, 2–5 Oct 1987, on flowers of *Solidago sempervirens*, W. E. Steiner, J. M. Swearingen, J. M. Hill, J. J. Marshall (1 ♂, 1 ♀; USNM). This site is at the tip of the Eastern Shore of the Chesapeake Bay and is located directly across the Bay from Norfolk and Virginia Beach.

Distribution.—Widespread throughout the Pacific basin (Hawaiian Islands, Japan, Panama, Taiwan); from there disjunct, presumably by introduction to the Mediterranean (Israel), and Virginia.

Natural history.—In Hawaii, specimens were collected from salt bush (*Atriplex semibaccata*), a plant introduced from Australia in the early part of this century. The specimens collected in Virginia were swept from goldenrod (*Solidago sempervirens*). Other species of the genus are predators, perhaps scavengers, on various molluscs, especially small mussels, and barnacles.

Remarks.—Mathis (1988) has suggested elsewhere that the lower Chesapeake Bay and adjoining land are the recipients of many introductions because of the large volume of commerce on these waterways. The lower Chesapeake Bay, the principal waterway associated with this portion of Virginia, is one of the busiest in the world, serving the large metropolitan areas of Baltimore and Washington, and housing a principal base for the U.S. Navy on the East Coast. With a high level of traffic, the possibility of an introduction, as "extra baggage," is much greater.

Other factors contributing to the introduction of species concern their natural history (Lewin 1987). All species reported recently, including this one, frequent the

littoral zone where they are scavengers on molluscs or feed on algae and/or seaweed that has accumulated on the shore. These food sources are plentiful in the littoral zones of Virginia. Furthermore, these habitats are not particularly rich in insect species, which may contribute to the success of an insect invader. The widespread distribution of *P. grandis* has undoubtedly further abetted the possibilities of invasion but has probably had little or no influence on the stability of the invasion afterwards.

Clearly much remains to be studied about the immigration of insects and of this species in particular, whose natural history and ecology are largely unknown. Also, basic survey work and general collecting are valuable tools in and prerequisites for the detection of exotic organisms.

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